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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,175	03/17/2004	Theodor Funck	46955.13	3846

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EXAMINER	
LIN, JERRY	

ART UNIT	PAPER NUMBER
1631	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/802,175	FUNCK, THEODOR	
	Examiner	Art Unit	
	JERRY LIN	1631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 April 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-18* is/are pending in the application.

4a) Of the above claim(s) *15-18* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicants' arguments, filed April 29, 2009, have been fully considered and they are deemed to be persuasive. However, in light of the amendments, the following rejections are deemed necessary. They constitute the complete set presently being applied to the instant application.

Status of the Claims

Claims 1 and 3-15 are under examination.

Claims 15-18 are withdrawn.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3, 5, 7-10, and 12, are rejected under 35 U.S.C. 103(a) as being unpatentable over Polacek et al. (Meas. Sci. Techol. (2001) volume 12, pages 1342-1347) in view of Lowe et al. (British Journal of Haemateology (1997) Volume 96, pages 168-173).

The instant claims are drawn to a method of using a resonator device for diagnostic investigation including the steps of accommodating a sample in a resonator device, measuring a macroscopic physical property of the sample such as viscosity by

the interaction of the sample with sound waves generated by the resonator device, correlating the physical property with reference data, determining the diagnositic characteristic of the sample between the property and the reference data, and displaying the diagnostic characteristic on display.

Regarding claims 1 and 3, Polacek et al. teach a method of accommodating a sample in a resonator device (page 1344) where viscosity may be measured using sound waves(page 1342, left column) and where the error is less than 0.1% (page 1345).

However, Polacek et al. do not teach correlating their data with reference data to characterize at least one condition of the sample.

Regarding claim 1, Lowe et al. teach a method of determining the viscosity of a sample (abstract) and correlating that data with reference data (page 170) to obtain at least one diagnostic characteristic (page 171, left column).

Regarding claims 5 and 7, Lowe et al. teach wherein a difference is determined between a first measure quantity of a sample and the reference measured quantity of a sample (page 170, right column).

Regarding claims 8 and 9, Lowe et al. teach determining the presence of lipids (page 169, left column) and for predicting ischaemic heart disease (page 169, left column, bottom).

Regarding claim 12, Lowe et al. teach adding an additive (page 169, left column).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the correlations methods of Lowe et al. with the method of Polacek

et al. to gain the benefit of determining the identity of biological fluids. Polacek et al. teach using acoustical spectrometry is advantageous because of its almost universal applicability. Thus one of ordinary skill in the art would be motivated to use Polacek et al.'s method to measure the properties the biological fluids in Lowe et al. However, Lowe et al. teach that to use the properties of the fluid to determine a diagnosis, one of ordinary skill in the art must compare that data to reference data. Thus one of ordinary skill in the art would have been motivated to use reference data, as suggested by Lowe et al. with data collected from Polacek et al.'s to provide a diagnosis based on that data.

3. Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Polacek et al. (Meas. Sci. Techol. (2001) volume 12, pages 1342-1347) in view of Lowe et al. (British Journal of Haemateology (1997) Volume 96, pages 168-173) as applied to claims 1, 3, 5, 7-9, and 12 above, and further in view of Aarnoudse et al. (Catheterization and Cardiovascular Interventions (2004) Volume 62, pages 56-63).

The instant claims are drawn to a method of using a resonator device for diagnostic investigation including the steps of accommodating a sample in a resonator device, measuring a macroscopic physical property of the sample such as viscosity by the interaction of the sample with sound waves generated by the resonator device, correlating the physical property with reference data, determining the diagnositic characteristic of the sample between the property and the reference data, and displaying the diagnostic characteristic on display. In addition, the instant claims include

embodiments where the samples are measured at different temperatures and pressures.

Polacek et al. and Lowe et al. are applied as above.

However, Polacek et al. and Lowe et al. do not teach samples are measured at different temperatures and pressures.

Aarnoudse et al. teach measuring at different temperatures and pressures (page 58).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Lowe et al. and Polacek et al. with Aarnoudse et al.'s device to gain the benefit of experimenting with blood under conditions that resemble an *in vivo* situation. Aarnoudse et al. teach that their model mimics the heart and blood flow (page 57). Using this device would aid one of ordinary skill in the art to study blood and how properties of blood are effect *in vivo* conditions. Thus to measure physical properties of blood in an experiment, one of ordinary skill in the art would have been motivated to combine Aarnoudse et al.'s in vitro model with the method of Lowe et al. and Polacek et al.

4. Claims 11, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Polacek et al. (Meas. Sci. Techol. (2001) volume 12, pages 1342-1347) in view of Lowe et al. (British Journal of Haemateology (1997) Volume 96, pages 168-173) as applied to claims 1, 3, 5, 7-10, and 12 above, and further in view of Reiber (Journal of Neurological Sciences (1994) volume 122, pages 189-203).

The instant claims are drawn to a method of using a resonator device for diagnostic investigation including the steps of accommodating a sample in a resonator device, measuring a macroscopic physical property of the sample such as viscosity by the interaction of the sample with sound waves generated by the resonator device, correlating the physical property with reference data, determining the diagnositic characteristic of the sample between the property and the reference data, and displaying the diagnostic characteristic on display. In addition, the instant claims include embodiments where the sample is CSF liquor and detects a neurodegenerative disease.

Polacek et al. and Lowe et al. are applied as above.

However, Polacek et al. do not teach sample is CSF liquor and detects a neurodegenerative disease.

Reiber teaches determining if there is a neurological disease if the CSF liquor has a higher viscosity (page 198, paragraph bridging left and right column) and where the albumin and immunoglobulins are separated (page 191).

It would have been obvious for one of ordinary skill in the art to substitute blood for CSF liquor in order gain the benefit of detecting neurodegenerative diseases. Polack et al. and Lowe et al. teach that measuring the viscosity of a biological fluid may be accomplished through a resonator. Reiber teaches that the viscosity of CSF may be an indication of a neurodegenerative disease. Thus, one of ordinary skill in the art would have been motivated to use the methods taught by Polack et al. and Lowe et al.

and substitute CSF liquor for blood to determine the viscosity of CSF liquor to determine if there is a neurodegenerative disease present.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JERRY LIN whose telephone number is (571)272-2561. The examiner can normally be reached on 7:00-5:30pm, M-TH.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marjorie A. Moran can be reached on (571) 272-0720. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jerry Lin/
Primary Examiner, Art Unit 1631
8/16/09